

## THE SINCLAIR/TIMEX USERS MAGAZINE

Volume III

OCTOBER 1985

Number 10

Photo: Remember When?

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— Inside This Issue —

**DK'Tronics Three Channel Sound Synthesizer**  
**Using the Ultra Hi-Res Graphics of the 2068**  
**Software: Astronomy Pack & Trans-Express**

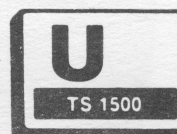
## "This Cat Has 9 Lives!"

Last month's "digitized" cat picture did not come out the way it was intended. So here it is again this month the original to compare it to (third time's the charm!). It was created by placing the original picture over the writing surface of the Zebra graphics tablet and tracing the outlines and then going back and filling in the shaded areas using the different shade patterns.



## "How to Make Money with Your Microcomputer"

The book review covering "How to Make Money with your Microcomputer" had the author of the review missing. The review was written by William R. Colby-Newton. Sorry William, and thanks.



### THE SINCLAIR/TIMEX USERS MAGAZINE

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# Ultra Hi-Res Graphics on the Timex 2068

Amongst the differences between the Spectrum and the 2068, there are the 2068's video modes. These modes are not directly reached by BASIC. To use them, we must write some routines in machine language. This machine code toolkit is for the mode called "extended color". If we type in normal mode:

```
CIRCLE 125,87,50:PLOT 0,87:DRAW 1,0,255
```

we will see the flash attribute on eight bytes. In the extended color mode, each display file byte has its own attribute byte. The color resolution is multiplied by eight.

There is no use of POKEs with the toolkit. When we need to pass some information to the machine code routine, we use the form:

```
INPUT USR add,x,y
```

where add is the routine entry point, and x & y are the information needed by the routine.

First type in the HEXLOADER program and SAVE it to tape. RUN the program and wait. If an error is detected, the line number will be printed. If there are no errors in the DATA statements, an error report "OUT OF DATA" will occur. Then RUN 550 to save the toolkit code.

RANDOMIZE USR 62000 switches the extended color mode on and a welcome message should be printed at the top of the screen. If not, type PRINT USR 0 and LOAD the HEXLOADER to check the DATA lines for any errors. Remember, its very important to CLEAR 61999 before switching into extended mode.

Here is a summary of the toolkit's routines:

```
RANDOMIZE USR 62000 enables D_FILE2
```

```
RANDOMIZE USR 62048 clears D_FILE1 and  
D_FILE2. CLS will  
only clear D_FILE1.  
If we have something  
on the screen and we  
want to change the  
ink color without
```

erasing the screen,  
INK x:RAND USR 62051  
will do it. This  
entry point erases  
only D\_FILE2, i.e.  
the attribute file.

```
INPUT USR 62069,X,Y attributes on PLOT.  
X=(8*PAPER)+INK. If  
we want a plot with  
yellow ink on blue  
paper, then  
X=(8*1)+6=14  
Y=FLASH/BRIGHT  
if Y=1 then BRIGHT 1  
Y=2 then FLASH 1  
Y=3 then BRIGHT 1  
and FLASH 1
```

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Y=0 then BRIGHT 1  
and FLASH 1  
These two arguments  
are not optional.

INPUT USR 62105,X,Y fills a zone with the  
attribute X and Y.  
X=(8\*PAPER)+INK  
Y=FLASH/BRIGHT  
For example, enter  
CIRCLE 125,87,80 and  
PLOT INVERSE 1,125,87  
to determine the  
filling starting  
point. If the screen  
PAPER is black and  
INK is yellow (if  
not, use PAPER 0:INK  
6:RAND USR 62051),  
type INPUT USR 62105,  
14,0 to fill the  
circle with green INK  
because X=(8\*0)+6=14

PRINT AT X,Y;INK/PAPER/FLASH/BRIGHT;CHR\$  
USR 62220

prints the variable  
s\$ with the different  
attributes than the  
current screen  
attributes. For  
example:

10 LET s\$="This is a  
test..."

20 PAPER 1:INK 0:RAND  
USR 62048: REM CLS

30 PRINT AT 10,5;  
FLASH 1; PAPER 0, INK  
6; CHR\$ USR 62220. If  
you don't let s\$  
equal something, an  
error report is given.

RANDOMIZE USR 62292 scrolls D\_FILE1 & 2  
one character up.  
RAND USR 62295 will  
scroll up D\_FILE2  
only.

RANDOMIZE USR 62346 scrolls D\_FILE1 & 2  
one character down.  
RAND USR 62360 will  
scroll down D\_FILE2  
only.

RANDOMIZE USR 62446 scrolls D\_FILE1 & 2  
one character left.  
RAND USR 62461 for  
D\_FILE2 only.

RANDOMIZE USR 62500 scrolls D\_FILE1 & 2  
one character right.  
RAND USR 62515 for  
D\_FILE2 only.

#### TECHNICAL NOTES

Don't forget to always CLEAR 61999.  
When D\_FILE2 is in use and the toolkit is  
in memory, there are 28268 bytes free to  
BASIC.

The UDG area now begins at 63256. The  
BASIC program begins at 31510. For a line  
0, POKE 31511,0. To put machine code in  
REM statements, poke at 31514 upward. To  
SAVE a screen to tape, use:

SAVE "D\_FILE1" CODE 16384,6143  
SAVE "D\_FILE2" CODE 24576,6143

At anytime, you can return to normal  
mode using OUT 255,0 and return to  
extended mode with OUT 255,2. When using  
the fill routine (INPUT USR 62105,x,y), if  
we reach the top or the bottom of the  
screen, an error report "Integer out of  
range" will occur. To overcome this  
situation, use ON ERR GOTO and ON ERROR  
RESET in your BASIC programs.

The DRAW command works but we don't  
have any control over the attribute. Same  
thing for CIRCLE. In extended color mode,  
attribute file2 is opened but not used. If  
you want you can use it to put machine  
code there. ATT\_FILE2 is between 30720 and  
31487 (767 bytes long). (Ed. note, only  
use RAND USR 62000 once.)

-- Real Gagnon  
(544 Hermine #2, Quebec, Quebec, Canada  
G1N 2G6)

1 REM HEXLOADER TOOLKIT ULTRA  
RES 2068 GAG-o85  
5 CLEAR 61999: LET a=10: LET  
b=11: LET c=12: LET d=13: LET e  
=14: LET f=15  
10 LET line=100: LET add=62000

15 READ s\$,sum: LET tot=0  
20 LET byte=16\*VAL s\$(1)+VAL s  
\$(2): LET tot=tot+byte: POKE ad  
d,byte



```

25 LET s$=s$(3 TO ): LET add=a
dd+1: IF s$<>" THEN GO TO 20
30 POKE 23692,255: IF sum=tot
THEN PRINT "Line ";line;" OK":
LET line=line+1: GO TO 15
40 BEEP .1,1: PRINT "Error at
line ";line: STOP
100 DATA "01FEFECDD99643E02CD8E0
E01FF00CD59FCCD60F2215AF406407E
D72310FB212067CD57F221006006203
E87772310FCC9CDE4083A8D5C320060
21006011016001",6628
101 DATA "0018EDB0C9CDDC1BCD602
678FE002808CB18CB18CB18E6C0C5ED
4B7D5CCD032601002009C1788177C9C
DDC1BCD6026CDF9F2ED5B7D5CCDC0F2
2006CDDFF21418",8153
102 DATA "F5ED5B7D5C15CDC0F2C0C
DDFF21518F6424BCD03264704487E07
10FDCB47C0CBC7410F10FD770100200
93AF8F277C91CCDC0F2200218F83A7D
5C5F1DCDC0F220",7828
103 DATA "0218F83A7D5C5FC90078F
E002808CB18CB18CB18E6C0788132F8
F2C92A4B53ED4B595CE5ED422809E17
EFE5328052318F2CF0123237EFE0028
052318E6CF012B",6911
104 DATA "462323C5CD41F3C17ED71
0F63E08D74EC9E52A845C3A8F5C1100
20190608772410FCE1C9CD390921006
011E05BD5E53E03012000C5E5EDB0D1
0EE0EDB0060709",6928
105 DATA "3DC120F0413A8D5C12131
0FCE1D1247CFE6838D9EB732C20FCC9
21FF5711FF5B3E0001EDF302180D21F
F7711FF5B3A8D5C01EDF302D5E53E03
012000C5E5EDB8",7542
106 DATA "D10EE0EDB806F909C13D2
0F0413AEDF3121B10FCE1D1257CF53A
EDF3FE00200EF1FE5030D0AF0620121
B10FC18BAF1FE7030C2AF0620121B10
FCC90000002101",7429
107 DATA "401100403E0001EDF302C
D0AF42101601100603A8D5C01EDF302
01C000ED43EBF3011F00EDB03AEDF31
21323ED4BEBF30D20EAC921FE5711FF
573E0001EDF302",6744
108 DATA "CD40F421FE7711FF773A8
D5C01EDF30201C000ED43EBF3011F00
EDB83AEDF3121B2BED4BEBF30D20EAC
9554C545241204849474820434F4C4F
52205245534F4C",6956
109 DATA "5554494F4E20323036385
44F4F4C4B495420202020204741472D
6F2020202076657273696F6E20332E3
500000000000000000000000000000
00000000000000",2796
500 REM SAVE HEXLOADER

```

```

510 SAVE "ultra 1": PRINT " Ver
ify "; VERIFY "": PRINT "OK":
STOP
550 REM Save Machine Code
560 SAVE "ultra_c"CODE 62000,62
0: PRINT " Verify "; VERIFY ""
CODE : PRINT "OK": STOP

```

---

```

1 REM DEMO1 GAG-o85
5 PAPER 0: INK 0: RANDOMIZE U
SR 62048
10 LET r=35: LET s=35: LET t=87
20 FOR n=0 TO 2*PI STEP PI/55
30 LET x=r*COS n: LET y=r*SIN n
35 LET papink=(8*0)+((RND*6)+1)
40 PLOT x+s,y+t
45 INPUT USR 62069,papink,0
50 NEXT n
55 BEEP .1,-1: LET s$="....PRE
SS A KEY....."
60 PRINT AT 20,0: BRIGHT 1: IN
K 4;CHR$ USR 62220: REM print s$
70 PAUSE 0: FOR i=0 TO 31
80 RANDOMIZE USR 62500: REM sc
roll right
90 NEXT i

```

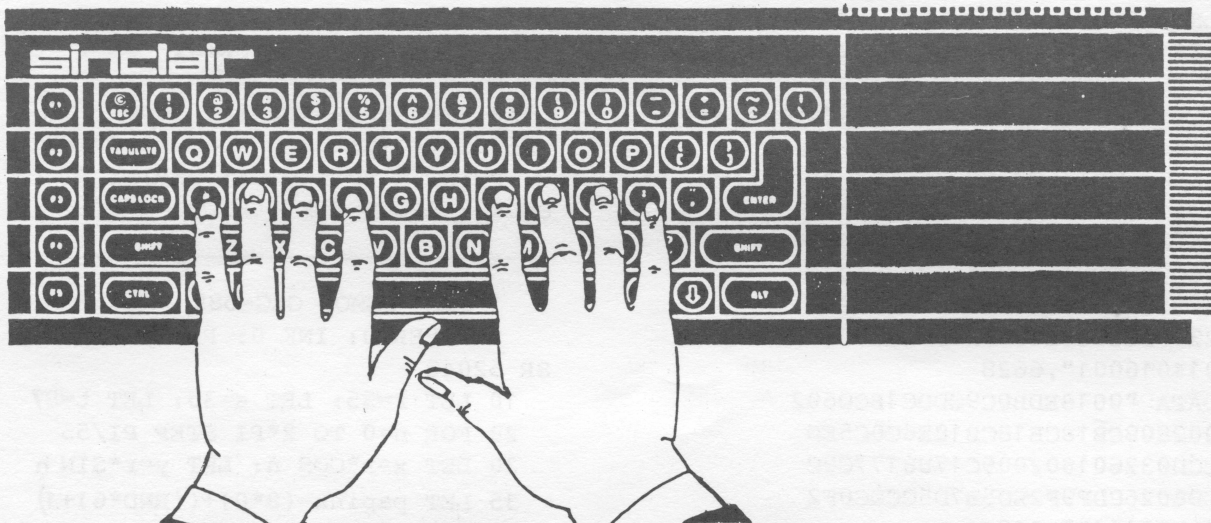
---

```

1 REM DEMO2 GAG-o85
5 PAPER 0: INK 1: BORDER 0: R
ANDOMIZE USR 62048
9 REM house
10 PLOT 8,10
20 DRAW 48,0: DRAW 0,48: DRAW
-48,0: DRAW 0,-48
30 PLOT 56,10: DRAW 70,20: DRA
W 0,48: DRAW -70,-20
40 PLOT 8,58: DRAW 24,30: DRAW
24,-30
50 DRAW 70,20: DRAW -24,30: DR
AW -70,-20
60 PLOT 0,130: DRAW 175,-10: D
RAW 80,10: DRAW 0,45: DRAW -255
,0: DRAW 0,-45: REM sky
70 PLOT 0,80: DRAW 30,30: DRAW
135,-5: DRAW 90,-25: REM grass
300 PLOT INVERSE 1,15,15: INPU
T USR 62105,5,0: REM fill house
310 PLOT INVERSE 1,57,20: INPU
T USR 62105,6,0: PLOT INVERSE
1,122,59: INPUT USR 62105,6,0
320 PLOT INVERSE 1,32,71: INPU
T USR 62105,2,0
330 PLOT INVERSE 1,175,150: IN
PUT USR 62105,1,0: REM fill sky
340 PLOT INVERSE 1,0,116: INPU
T USR 62105,4,0: REM fill grass
700 CIRCLE INVERSE 1,180,150,10

```

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# Astronomy Program Pack — A Review

ASTRONOMY PROGRAM PACK, I. Auersbacher, 41 King Street A2, Belleville, NJ 07109; for the TS-2068; \$14.95.

When you are showing off your computer to someone who is not a computer user, what type of program do you select? A spreadsheet program? A database? A word processor? No, you'll probably pick out your best game program with bells, whistles and blinking lights.

Some programs are designed to be more substantive than merely impressive. Most of my computer software is either educational or utilitarian. I enjoy making my computer work for me rather than entertain me.

The Astronomy Program Pack falls into this useful category. One tape contains six programs that astronomers, astronomy educators and others will find both helpful and easy to use.

"Ephemeris" is an ostentatious yet accurate title. "The" Ephemeris is an annual book published jointly by the Naval Observatory in the U.S. and by the Royal Greenwich Observatory in the U.K. It contains calculations for the positions of the Sun, Moon, and planets for each day of the year. So does this program. One peculiarity of the output is the calculation of geocentric positions in non-standard units. The right ascension of the celestial objects is given in degrees and minutes instead of hours and minutes. The user accustomed to the latter must divide the output by fifteen to obtain the positions in more familiar terms.

Moon Phase Calculator  
© 1985 I. Auersbacher

Enter Year: 1985

Output to which device?

- 1-TU Screen
- 2-TS Printer

Please pick option (1-2)

Moon Phase	Date of Event	Time
0 Full Mn.	Mo Jan.07,1985	02:17
1 Last Qtr	Su Jan.13,1985	23:27
2 New Moon	Mo Jan.21,1985	02:30
3 1st. Qtr	Tu Jan.29,1985	03:29
0 Full Mn.	Tu Feb.05,1985	15:19
1 Last Qtr	Tu Feb.12,1985	07:58
2 New Moon	Tu Feb.19,1985	18:43
3 1st. Qtr	We Feb.27,1985	23:41
0 Full Mn.	Th Mar.07,1985	02:15
1 Last Qtr	We Mar.13,1985	17:34
2 New Moon	Th Mar.21,1985	12:00
3 1st. Qtr	Fr Mar.29,1985	16:11
0 Full Mn.	Fr Apr.05,1985	11:33
1 Last Qtr	Fr Apr.12,1985	04:42
2 New Moon	Sa Apr.20,1985	05:23
3 1st. Qtr	Su Apr.28,1985	04:24

"Moon" is a mild disappointment. This program calculates the dates of moon phases. A more ambitious program would be to calculate the rising and setting times of the Moon. This is a difficult task because of the rapid movement of the Moon, but, I daresay, beyond the skill of the programmer.

"Eclipse" is a real surprise. I have seen few attempts at calculating solar and lunar eclipse circumstances by any developer of Timex-Sinclair or Spectrum astronomy software. This program is by far the most thorough and most accurate in a challenging area.

## Solar/Lunar Eclipses 1985

LUNAR ECLIPSE - (Umbral)  
Total Eclipse of the MOON  
Date: Mo Oct.28,1985 17:43  
Maximum Magnitude= 1.072

Start partial: 15:56 GMT  
Start - total: 17:22 GMT  
Max. eclipse : 17:43 GMT  
End of total : 18:04 GMT  
End - partial: 19:30 GMT

\*\*\* SOLAR ECLIPSE \*\*\*  
Central Eclipse - Total  
Date: Tu Nov.12,1985 14:09  
Visible southern hemisphere

# Sunrise & Sunset Times

© 1985 I. Aversbacher

Month: Oct. Long= 90  
 Year : 1985 Lat.= 35  
 Zone : 5 MEMPHIS

Output to which device?

- 1-TV Screen
- 2-TS printer

Please pick option (1-2)

## SUNRISE / SUNSET TIMES for:

Place: MEMPHIS Long: 90  
 Month: Oct. Lat.: 35  
 Year : 1985 Zone: 5

Date (m/d/w)	Sunrise (a.m.)	Sunset (p.m.)	Length of day
Oct. 1 Tu	6:55	6:44	11:49
Oct. 2 We	6:55	6:43	11:47
Oct. 3 Th	6:56	6:41	11:45
Oct. 4 Fr	6:57	6:40	11:43
Oct. 5 Sa	6:58	6:39	11:41
Oct. 6 Su	6:58	6:37	11:39
Oct. 7 Mo	6:59	6:36	11:37
Oct. 8 Tu	7:00	6:34	11:34
Oct. 9 We	7:01	6:33	11:32
Oct. 10 Th	7:02	6:32	11:30
Oct. 11 Fr	7:02	6:30	11:28
Oct. 12 Sa	7:03	6:29	11:26
Oct. 13 Su	7:04	6:28	11:24


"Sun" will tell you local sunrise/sunset and length of daylight times. This program is in good agreement with the calculations made by a local Naval Air Station. A one minute difference is the most that was usually observed.

"Seasons" is a program likely to be of use only to a limited number of users. It will tell you the exact moment of the vernal and autumnal equinoxes and the summer and winter solstices for any year if you can't wait for a local television weather forecaster to inform you.

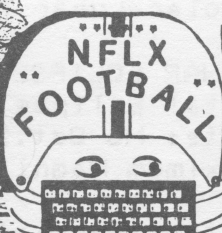
"Calendar" is of use to astronomers who need to know how many days have elapsed between certain events. The Gregorian Calendar is difficult to work with in this respect. The Julian Calendar is used for such calculations. The "Calendar" program converts between the two and also draws an accurate monthly calendar on the screen for a wide range of dates.

The documentation contains background material describing the concepts involved. All program output can be seen on the screen or sent to the printer. All six programs operate from identical formats that require only minimal keyboard input. The Astronomy Pack is a good substitute for expensive alternative sources of the information it provides.

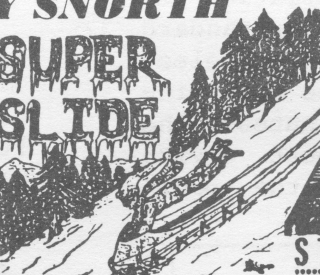
-- Duncan R. Teague




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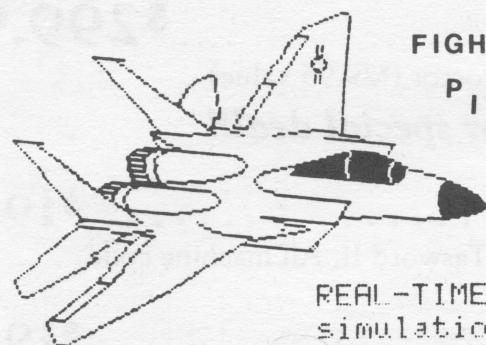
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# Adding Microdrives and Interface III to a Timex 2068

As a subscriber to SUM, I thought I would sit down and take the time to share with others my experience with some new hardware that I recently purchased from the English Micro Connection. Although the total purchase price of everything might appear somewhat excessive (\$250), the end results are very rewarding. The hardware involved is as follows:

**ZX SPECTRUM EXPANSION SYSTEM (\$134.95).** It consists of Interface I, a Microdrive Unit, the necessary cables, and Cartridge Pack with 4 microdrive cartridges: Tasword II and Masterfile on the business cartridge; Ant Attack and Games Designer on the games cartridge; Utilities and Help on a cartridge; and a blank cartridge.

**INTERFACE III (\$59.95).** Transfers every Spectrum program available on to microdrive or makes a back-up copy to tape.

**10 MICRODRIVE CARTRIDGES (\$2.75 each) & EMC SPECTRUM BUS ADAPTER (\$45.00).** Designed to connect to the 2068's edge connector, and gives you a Spectrum edge connector for running all Spectrum hardware with Emulator, Romswitch or ROM chip.

To start with, I should tell you that I also own an A & J Waferdrive. I feel the Sinclair is faster than the A & J by a mile. All microdrive cartridges are about 85K. A & J cartridges are of different lengths from 14K to 85K. Though both use an endless loop tape, the microdrive seems to be able to get back around to the same place on its tape and load a program than the A & J. Microdrive cartridges are half the size of the A & J cartridges.

Now to the heart of all this hardware. To use Interface III, just load a Spectrum program from tape as you would normally. Once the program is running, it generally will ask you for some kind of keyboard input. At this time a red button on the interface is pushed, a blank tape put in your recorder and a fresh recording of the program saved to it. After saving, the computer must be reset. Next, a short utility program is loaded which reads what Interface III just had you save on tape. A prompt concerning the opening screen of the program you are converting allows you

to determine if you should save the screen as well.

Finally, you are asked if you wish to save the final version on tape or microdrive. The final copy will be missing part of the opening screen (to show that this is a copied program perhaps).

This may sound difficult, but the actual work is easier than explaining it. If you run into any problems, drop me a line (with SASE) or call: Ken Duda, 210 Bernice Dr., Northlake, IL 60164; 312/562-5898. I might also add that all this is available, along with their new catalog (it's more like a manual!), from the English Micro Connection, 15 Kilburn Court, Newport, RI 02840; 401/849-3805.

-- Ken Duda

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# DK'Tronics Three Channel Sound Synthesizer

The DK'TRONICS Sound Synthesizer is a hardware and software combination using the AY-3-8912 programmable sound generator integrated chip -- the same as that used in the 2068.

The hardware portion comes attractively packaged complete with feed through connector for other peripherals. Also included is a four inch speaker in its own separate cabinet. A volume control sticks out the top which controls overall volume as well as the BEEP volume.

The chip itself has 14 internal registers, each dealing with a specific function of sound output. To create your own sound and noise effects, you must first enable the desired register and then fill it with the data for the sound you wish to make (same as with the 2068).

To enable a register, this interface uses OUT 63, register number (0-13). To send data, it uses OUT 95, data. The registers are used to control the tone of

the three channels, the white noise frequency, the volume for each channel, the envelope period, the envelope shape, and the enabling of all channels.

The manual gives a good summary of all the register functions and musical note data. Also included in the manual are several short routines for you to use to program the synthesizer and instructions for using the software which comes with the package.

The software that comes with it allows you to set all the registers to any mode and enter on a piano-like keyboard displayed on the screen the music you wish to play. The program allows the use of a joystick supporting the DK'TRONICS, KEMPSTON, and INTERFACE 2 types.

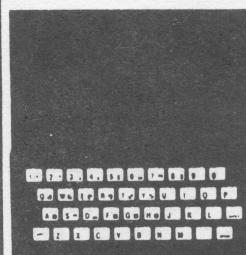
The program comes up running and greets you with a menu at the top and a piano keyboard at the bottom. In the middle is a window for all three sound channels. You have the ability of programming three tunes each holding up to 768 notes (256 per channel). If you select tune 1 and choose the play option you will hear a pre-programmed tune. In my case it was Simon and Garfunkel's Parsley, Sage, Rosemary and Thyme.

As the tune plays, the current notes being played are displayed in the window, so you can easily find where the mistakes are while working on your own composition.

To program your own music, you would select the RECOrd option which turns joystick control (or arrow keys) to an arrow which can be moved to point to each of the keys on the piano-like keyboard. When you come upon the key which you want, you simply press fire or "0" and it is recorded into memory and is displayed in the window of the current channel being programmed. If you choose middle C which is in the third octave, it would be displayed as C3. Middle C# is displayed as C#3.

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-- Joe Williamson



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
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## "TRANS-EXPRESS" Tape to Wafadrive Utility

The Rotronics Wafadrive system provides a very viable alternative to cassette tape or even disk drives for many Spectrum users in the UK. Now, with the appearance of several "twister" type boards which allow "spectrumized" TS-2068s to run Spectrum hardware, 2068 owners are enjoying the Wafadrive as well. However, there is a fly in the soup-- the Wafadrive operating system occupies about 2K of the computer's memory, making it difficult to directly transfer many commercial programs containing machine code over to wafer.

"TRANS-EXPRESS" from the Romantic Robot (?) company in England is a software utility which purports to help transfer difficult programs over to wafer. In the U.S., Trans-Express is available from Damco, the distributor of the Rotronics Wafadrive.

SUM tested a copy of Trans-Express with mixed results. Tasword II would not transfer, nor would Taswide or Pool. Admittedly our selection of Spectrum software is slim but we could not get a single major program to transfer which contained any significant amount of machine code. Programs entirely in Basic did transfer, though in general they could be transferred even without Trans-Express.

It is difficult to say whether or not the program can do what it claims. It did not live up to our expectations. The main problem is very simple--LACK OF DOCUMENTATION! The only instructions packed with Trans-Express is a single full size sheet printed on one side in two columns of 2040 printer output. Several items that appear on the screen while running the utility are not explained or even mentioned in the instructions. When a program would not transfer or when the Wafadrive would run continuously, no hint from the instruction sheet was there to help. Probably, the author of Trans-Express knows exactly what to do in those cases, and how to make the program do exactly what he wants. But since he could not tell other users how, a program that is innovative and potentially very useful is very limited in its use.

Whenever Romantic Robot publishes the details needed to fully utilize their program, then we can re-evaluate this soft-

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ware and make our recommendations. Until then, we cannot recommend it except for experimenters. Price is \$19.95.

-- Richard Cravy

Postscript: Probably much more useful for many Rotronics Wafadrive users will be the Engineering Technical Bulletin available from Damco. Included are modified listings of Tasword II, Vu-Calc, Vu-File, and Masterfile allowing them to be saved on and run from wafer. A new improved version of Spectral Writer and several utilities are printed out which Rotronics claims will help in transferring other software to the wafers. Price is about \$5 from Damco, 67 Bradley Ct., Fall River, MA 02720; 617/678-2110.

## Editorial & Apology

A number of you noted how late your September issue arrived. The fact is...we muffed it! We were late getting the September issue together, then our printing facility was tied up with another job which meant that we had to wait until ours could be printed. The end result: our September issue came out in October. We apologize. This issue is being mailed the first of November. The November issue is scheduled for the third week of that month. In other words, we will be back on schedule after this brief deviation.

Here at SUM we know how important your trust in us is. Whenever you fail to receive an issue, let us know. We will always mail another out FIRST CLASS, even if the post office was at fault. (By the way, allow up to about 2 1/2 weeks from our stated mailing dates before checking with us. The post office can be that slow!) If you are unhappy with our service or coverage, let us know. We can't please everyone, but we do try to answer all correspondence we can, and satisfy every legitimate complaint. We have received numerous calls and letters detailing problems with other publications and suppliers in our market. It is a fact of life that several companies have taken money and not given full value for it. We at SUM want to urge every fellow editor/publisher and company in our market to pay full attention to the needs of your customers. Let's not be so shortsighted that we "bite the hands that feed us."

On another note, the holiday season is coming up, and what better way to make you and your computer happy than by giving a list of "goodies" to your mate, parents, or close friend, detailing software or hardware for your machine from one of our advertisers. If all else fails, do it for yourself! There's some great new stuff out there for our machines, and you'll almost surely be happy with it all!

Sinclair USA has succumbed to the lower pricing of the English Sinclair QL and has now lowered to price of the American QL to \$299.95. This is a real bargain!--a 128K computer with two microdrives and a set of serious software: word processing, database, graphics. Quite a bit of third party software is already available thru companies like English Micro Connection and Curry. And while I'm at it, congratulations to Sinclair for finally deciding to add dealers (like those above) and quit trying to sell strictly thru their own mailorder efforts. Maybe this will be in time for Christmas and will therefore create the big boost the QL needs at this time. SUM intends to support the QL.

-- Richard Cravy

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